AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 1-33 and add the following new claims 34-70 as follows:

1-33.   (Canceled)

34.   (New) In a packet-switched network, the network comprising at least one Asynchronous Transfer Mode or ATM switch and at least one ATM device other than the ATM switch, a method for analyzing the behavior of the network by performing steps comprising:

5   (a) determining first and second proportions of a total number of packets transmitted and/or to be transmitted by the ATM network over a selected time interval, wherein the first proportion is associated with first packets of a first packet type and the second proportion is associated with second packets of a second packet type;

(b) based on a first mean and variance, generating a first set of packet interarrival

10   times representative of first packets, wherein each first packet has at least one of (i) a packet interarrival time less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority, and wherein the distribution of the first set of packet interarrival times is at least substantially lognormal;

(c) based on a second mean and variance, generating a second set of packet

15   interarrival times representative of second packets, wherein each second packet has at least one of (i) a packet interarrival time of more than the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority and wherein the distribution of the second set of packet interarrival times is at least substantially normal; and

20   (d) combining the first and second sets of packet interarrival times to provide a synthetic traffic stream, wherein a packet interarrival time is a time interval between the arrivals of temporally adjacent, individual packets.

35.   (New) The method of Claim 34, wherein the number of first packets in the first proportion represents a first percentage of the total number of packets, wherein the number of second packets in the second proportion represents a second percentage of the total number of packets, and wherein the determining step (a) includes:

5   (a1) quantifying the total number of packets using at least one of the following techniques: busy hour, busy day, busy month, peak call rate, and committed burst size;

(a2) multiplying (a) the first percentage and (b) the total number of packets to provide a first number of first packets of the first packet type; and

(a3) multiplying (a) the second percentage and (b) the total number of packets to

10   provide a second number of second packets of the second packet type, wherein, in the combining steps, a respective one of the first and second numbers of packets is used to generate the corresponding one of the first and second sets of packet interarrival times.

36.   (New) The method of Claim 34, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (i) a packet interarrival time of less than a selected value and the at least one of (i) a packet interarrival time of more than

5   the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (i) a packet interarrival time of more than the selected value.

37.   (New) The method of Claim 34, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (ii) a packet payload of voice and/or video information and the at least one of (i) a packet interarrival time of more than

5   the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (ii) a packet payload of information other than the voice and/or video information.

38.   (New) The method of Claim 34, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (iii) at least a first admission priority and the at least one of (i) a packet interarrival time of more than the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (iii) less than the second admission priority.

39.   (New) The method of claim 34, wherein the first set of interarrival times is based on the first proportion and the second set of interarrival times is based on the second proportion.

40.   (New) The method of Claim 34, wherein the voice and/or video information is voice information, wherein a plurality of third packets are of a third packet type, and wherein a third proportion of the total number of packets is of the third packet type and further comprising:

(e) based on a third mean and variance, generating a third set of packet interarrival times representative of third packets transmitted and/or to be transmitted over the network, wherein each third packet has a payload of video information, and wherein the distribution of the first set of packet interarrival times is at least substantially lognormal.

41.   (New) The method of Claim 34, wherein a total number of packet interarrival times in the first set of packet interarrival times is equal to a number of first packets and wherein a total number of packet interarrival times in the second set of packet interarrival times is equal to a number of second packets.

42.   (New) The method of Claim 34, wherein the first set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of first packets of the first packet type.

43.   (New) The method of Claim 42, wherein the second set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of second packets of the second packet type.

44.   (New) The method of claim 34, further comprising:

(e) based on the synthetic traffic stream, determining at least one of a required number of buffers and/or buffer capacity, a desired transmission speed of packets, a peak delay of traffic stream, and optimum traffic mix of voice, video, and data other than voice

5   and video of the ATM network.

45.   (New) In a packet-switched network, the network comprising at least one Asynchronous Transfer Mode or ATM switch and at least one ATM device other than the ATM switch, a system for characterizing packet interarrival times, comprising:

(a) determining first and second proportions of a total number of packets

5   transmitted and/or to be transmitted by the ATM network over a selected time interval, wherein the first proportion is associated with first packets of a first packet type and the second proportion is associated with second packets of a second packet type;

(b) based on a first mean and variance, generating a first set of packet interarrival times representative of first packets, wherein each first packet has at least one of (i) a

10   packet interarrival time less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority, and wherein the distribution of the first set of packet interarrival times is at least substantially lognormal;

(c) based on a second mean and variance, generating a second set of packet interarrival times representative of second packets, wherein each second packet has at

15   least one of (i) a packet interarrival time of more than the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority and wherein the distribution of the second set of packet interarrival times is at least substantially normal; and

(d) combining the first and second sets of packet interarrival times to provide a
20   synthetic traffic stream, wherein a packet interarrival time is a time interval between the
arrivals of temporally adjacent, individual packets.

46.   (New) The system of Claim 45, wherein the number of first packets in the
first proportion represents a first percentage of the total number of packets, wherein the
number of second packets in the second proportion represents a second percentage of the
total number of packets, and wherein the analyzing means further quantifies the total
5   number of packets using at least one of the following techniques: busy hour, busy day,
busy month, peak call rate, and committed burst size; multiplies (a) the first percentage
and (b) the total number of packets to provide a first number of first packets of the first
packet type; and multiplies (a) the second percentage and (b) the total number of packets
to provide a second number of second packets of the second packet type, wherein, in the
10   combining steps, a respective one of the first and second numbers of packets is used to
generate the corresponding one of the first and second sets of packet interarrival times.

47.   (New) The system of Claim 45, wherein the at least one of (i) a packet
interarrival time of less than a selected value, (ii) a packet payload of voice and/or video
information, and (iii) at least a first admission priority is (i) a packet interarrival time of
less than a selected value and the at least one of (i) a packet interarrival time of more than
5   the selected value, (ii) a packet payload of information other than voice and/or video
information, and (iii) less than the first admission priority is (i) a packet interarrival time
of more than the selected value.

48.   (New) The system of Claim 45, wherein the at least one of (i) a packet
interarrival time of less than a selected value, (ii) a packet payload of voice and/or video
information, and (iii) at least a first admission priority is (ii) a packet payload of voice
and/or video information and the at least one of (i) a packet interarrival time of more than
5   the selected value, (ii) a packet payload of information other than voice and/or video

-6-

information, and (iii) less than the first admission priority is (ii) a packet payload of
information other than the voice and/or video information.

49.   (New) The system of Claim 45, wherein the at least one of (i) a packet
interarrival time of less than a selected value, (ii) a packet payload of voice and/or video
information, and (iii) at least a first admission priority is (iii) at least a first admission
priority and the at least one of (i) a packet interarrival time of more than the selected
value, (ii) a packet payload of information other than voice and/or video information, and
(iii) less than the first admission priority is (iii) less than the second admission priority.

50.   (New) The system of claim 45, wherein the first set of interarrival times is
based on the first proportion and the second set of interarrival times is based on the
second proportion.

51.   (New) The system of Claim 45, wherein the voice and/or video
information is voice information, wherein a plurality of third packets are of a third packet
type, wherein a third proportion of the total number of packets is of the third packet type
and wherein the analyzing means, based on a third mean and variance, generates a third
set of packet interarrival times representative of third packets transmitted and/or to be
transmitted over the network, wherein each third packet has payload of video
information, and wherein the distribution of the first set of packet interarrival times is at
least substantially lognormal.

52.   (New) The system of Claim 45, wherein a total number of packet
interarrival times in the first set of packet interarrival times is equal to a number of first
packets and wherein a total number of packet interarrival times in the second set of
packet interarrival times is equal to a number of second packets.

53.   (New) The system of Claim 45, wherein the first set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of first packets of the first packet type.

54.   (New) The system of Claim 53, wherein the second set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of second packets of the second packet type.

55.   (New) The system of claim 45, wherein:

based on the synthetic traffic stream, at least one of a required number of buffers and/or buffer capacity, a desired transmission speed of packets, a peak delay of traffic stream, and optimum traffic mix of voice, video, and data other than voice and video of

5   the ATM network is determined.

56.   (New) In a packet-switched network, the network comprising at least one Asynchronous Transfer Mode or ATM switch and at least one ATM device other than the ATM switch, a system for characterizing packet interarrival times, comprising:

a lognormal number generator operable, based on a first mean and variance, to

5   generate a first set of packet interarrival times representative of first packets of a first packet type transmitted and/or to be transmitted over the network, wherein each first packet has at least one of (i) a packet interarrival time less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority, and wherein the distribution of the first set of packet interarrival times is at least

10   substantially lognormal;

a normal number generator operable, based on a second mean and variance, to generate a second set of packet interarrival times representative of second packets of a second packet type transmitted and/or to be transmitted over the network, wherein each second packet has at least one of (i) a packet interarrival time of more than the selected

15   value, (ii) a packet payload of information other than voice and/or video information, and

(iii) less than the first admission priority and wherein the distribution of the second set of packet interarrival times is at least substantially normal; and

a combiner operable to combine the first and second sets of packet interarrival times to provide a synthetic traffic stream, wherein a packet interarrival time is a time

20   interval between the arrivals of temporally adjacent, individual packets.

57.   (New) The system of Claim 56, wherein first and second proportions of a total number of packets have been transmitted and/or are to be transmitted by the ATM network over a selected time interval, wherein the first proportion is associated with the first packet type and the second proportion is associated with the second packet type.

58.   (New) The system of Claim 56, wherein the number of first packets in the first proportion represents a first percentage of the total number of packets, wherein the number of second packets in the second proportion represents a second percentage of the total number of packets, and wherein the analyzing means further quantifies the total

5   number of packets using at least one of the following techniques: busy hour, busy day, busy month, peak call rate, and committed burst size; multiplies (a) the first percentage and (b) the total number of packets to provide a first number of first packets of the first packet type; and multiplies (a) the second percentage and (b) the total number of packets to provide a second number of second packets of the second packet type, wherein, in the

10   combining steps, a respective one of the first and second numbers of packets is used to generate the corresponding one of the first and second sets of packet interarrival times.

59.   (New) The system of Claim 56, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (i) a packet interarrival time of less than a selected value and the at least one of (i) a packet interarrival time of more than

5   the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (i) a packet interarrival time of more than the selected value.

60.   (New) The system of Claim 56, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (ii) a packet payload of voice and/or video information and the at least one of (i) a packet interarrival time of more than the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (ii) a packet payload of information other than the voice and/or video information.

61.   (New) The system of Claim 56, wherein the at least one of (i) a packet interarrival time of less than a selected value, (ii) a packet payload of voice and/or video information, and (iii) at least a first admission priority is (iii) at least a first admission priority and the at least one of (i) a packet interarrival time of more than the selected value, (ii) a packet payload of information other than voice and/or video information, and (iii) less than the first admission priority is (iii) less than the second admission priority.

62.   (New) The system of claim 56, wherein the first set of interarrival times is based on the first proportion and the second set of interarrival times is based on the second proportion.

63.   (New) The system of Claim 56, wherein the voice and/or video information is voice information, wherein a plurality of third packets are of a third packet type, wherein a third proportion of the total number of packets is of the third packet type and wherein the analyzing means, based on a third mean and variance, generates a third set of packet interarrival times representative of third packets transmitted and/or to be transmitted over the network, wherein each third packet has a payload of video information, and wherein the distribution of the first set of packet interarrival times is at least substantially lognormal.

-10-

64.   (New) The system of Claim 56, wherein a total number of packet interarrival times in the first set of packet interarrival times is equal to a number of first packets and wherein a total number of packet interarrival times in the second set of packet interarrival times is equal to a number of second packets.

65.   (New) The system of Claim 56, wherein the first set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of first packets of the first packet type.

66.   (New) The system of Claim 65, wherein the second set of packet interarrival times comprises, for each packet interarrival time, a corresponding number of second packets of the second packet type.

67.   (New) The system of claim 56, wherein based on the synthetic traffic stream, at least one of a required number of buffers and/or buffer capacity, a desired transmission speed of packets, a peak delay of traffic stream, and optimum traffic mix of voice, video, and data other than voice and video of the ATM network is determined.

68.   (New) The method of claim 34, wherein the packet interarrival times in the synthetic traffic stream are distributed according to the following equation:

$$F(x) = \Psi \cdot \Lambda(\mu_1.\delta^2_{1,}) + (1-\Psi) \cdot N(\mu_2,\delta^2_2)$$

where a mixing parameter, Ψ, is the first proportion,

5   μ_1 is the first mean,

δ_1^2 is the first variance,

μ_2 is the second mean, and

δ_2^2 the second variance.

69.   (New) The system of claim 45, wherein the packet interarrival times in the synthetic traffic stream are distributed according to the following equation:

$$F(x) = \Psi \cdot \Lambda(\mu_1.\delta^2_{1,}) + (1-\Psi) \cdot N(\mu_2,\delta^2_2)$$

where the mixing parameter, Ψ, is the first proportion,

5   μ_1 is the first mean,

δ_1^2 is the first variance,

μ_2 is the second mean, and

δ_2^2 the second variance.

70.   (New) The system of claim 57, wherein the packet interarrival times in the synthetic traffic stream are distributed according to the following equation:

$$F(x)=\Psi\cdot\Lambda(\mu_1.\delta^2_{1,}) + (1-\Psi)\cdot N(\mu_2,\delta^2_2)$$

where a mixing parameter, Ψ, is the first proportion,

5   μ_1 is the first mean,

δ_1^2 is the first variance,

μ_2 is the second mean, and

δ_2^2 the second variance.